

## ABSTRACT OF THE DISCLOSURE

The present invention provides methods, systems, devices, and computer program instructions for enabling low-power wireless devices (such as wireless telephones and personal digital assistants, or PDAs) to connect to a fast wired or wireless voice/data network. A novel relay point device, referred to as an "extension point", is defined that flexibly extends the effective reach of network access points. Use of extension points enables the network infrastructure to be expanded (and subsequently re-configured, if necessary) simply and cost-effectively, requiring little or no additional physical wiring. The defined techniques provide an infrastructure that is scalable, supporting a large number of end users without substantial degradation to connection establishment time and data rates. Using the disclosed techniques, end devices are able to reach network services, and to communicate with other end devices, beyond the nominal working range of these devices and without limitation to the numbers of such devices.